

- Legs largely black, size larger (length over 10 mm.) . . . 5
5. Front tibiae yellow others black, wings hyaline. . . *mittelli*
Front and middle tibiae yellow, wings not hyaline . . . *dimidiatus*
6. Only one complete light pollinose crossband on the abdomen, namely that on the first segment. . . . *elizabethae*
Several complete crossbands on abdomen 7
7. Beard and mystax yellow, size smaller *similis*
Beard black, mystax often partly so *cruciatus*

New Species and Forms of Lepidoptera (Heterocera).

By WM. BARNES and F. H. BENJAMIN, Decatur, Illinois.

Automeris zephyria form *zephyriata* nov.

Entirely similar to *zephyria* but with the fuscous tints of the primaries, secondaries, and thorax, largely replaced by deep rufous.

A. zephyria form *zephyriata* holds the same relative position to *zephyria* that *A. pamina* form *auroseca* holds to *pamina*. It apparently emerges as an uncommon form in bred lots. Intergrades occur.

Type locality: High Rolls, New Mexico, (Bonniwell).

Number and sexes of types: Holotype ♂, April; Allotype ♀, April; 4 ♂ Paratypes, March (1), April (2), July (1); 2 ♀ Paratypes, no date.

Epia jola sp. nov.

1913, B. & McD., Contr. Nat. Hist. Lep. N. A., II, No. 1, 14, pl. VI, f. 11, as *ectrapela*, *Epia*.

Primaries: ground color whitish, heavily overlaid by fuscous shades; basal line black, double, included space white, waved from costa to below cell, thence obsolete; its point of obsolescence being marked by a broken, basal, black dash; t. a. line black, double, included space white, strongly and obliquely excurved to claviform, thence drawn to a mesal point on vein 1, thence distally produced to a point below vein 1; claviform large, outlined and more or less filled in by black; orbicular outlined by black, white filled with a central fuscous shade; an oblique white shade from orbicular to near inner margin; reniform outlined by black, white filled, with a darker central crescent which has a whitish center; a waved, fuscous, median shade, connecting the reniform with the distal end of the claviform, and the inner margin; t. p. line produced to points on the veins, black, double, included space white, strongly excurved from costa to about vein 4, incurved to inner margin; s. t. space with a black patch on costa, and sagittate black dashes between veins 2-3, 3-4, 4-5; s. t. line inwardly oblique from costa to about vein 7, broken, again starting on vein 7 almost parallel to outer margin, pro-

duced on veins 3 and 4 forming a small W-mark; terminal space not intersected by black dashes; a terminal line of black crescents between the veins; fringe whitish-gray, interlined by fuscous.

Secondaries: fuscous, somewhat paler basally, veins darker, with discal spot and median shade.

Beneath: whitish, powdered by black; both pairs of wings with discal spots and darker outer margins; secondaries showing obscure median and s. t. shade lines, and with the discal spot often connected to the base by a bar of black scales. *Expanse*: 28-33 mm.

Allied to *minorata*, but lacking the strong brown tinges, with the s. t. space much wider, dashes in the s. t. space not obsolescent (as in the type male of *minorata*, Havilah, Calif., Hy. Edw. Coll.), besides possessing less strongly laminated and ciliated antennae in the male.

Perhaps more closely allied to *ectrapela*, but much more brightly marked. Compared with the series in the Smith Collection it seems quite distinct from the female type from Agnes Lake, British Columbia, and nearer to specimens labeled *minorata*.

It is possible that further specimens may show intergrades with true *ectrapela*, but twenty-two specimens from Utah, seem to present an almost uniform appearance. Seven specimens from Wallace, Idaho, received through the kindness of Messrs. Doll and Marloff, seem to be the same species, altho slightly darker than the Utah specimens. Genitally there appears to be a slight difference between the Utah and Idaho specimens in the spinulation of the penis, but this is probably individual. In order to insure against a mixed series, the types are restricted to the following:

Type locality: Eureka, Utah (Tom Spalding).

Number and sexes of types: Holotype ♂, 1 July 1921; Allotype ♀, 1 July 1921; 8 ♂, 12 ♀, Paratypes, various dates from 21 June to 1 August.

Types in: Barnes Collection; Paratypes, Brooklyn Museum, Canadian National, Marloff and Spalding Collections.

***Hyssia marloffii* sp. nov.**

Primaries: ground color violaceous-gray, powdered with black; basal line black, double, outwardly oblique from costa to radius, thence almost erect to median vein where it becomes obsolescent; t. a. line black,

double, outwardly oblique from costa, interrupted by a slight tooth above cell, inwardly oblique from submedian fold, produced to a long point below vein 1; median shade black, outwardly oblique from costa to inner margin; t. p. line black, double, produced to small points on the veins, excurved from costa to about vein 5, thence inwardly oblique, with a slight curvature, to inner margin; s. t. line marked on the costa by a black patch, thence as a pale diffuse shade, marked by small black dots, to inner margin; terminal line of black dots; basal-t. a. area heavily powdered with black, disconcolorous with the basal half of the median area; orbicular present but obsolescent, faintly outlined by a few black scales; reniform large, more or less kidney-shaped, yellowish, with somewhat darker central crescent, obscured on median vein by fuscous; cell between median shade and reniform filled in with black; a black dash connecting the reniform with the t. p. line; another black dash, in submedian fold, connecting the basal line with the t. a. line, thence often faintly marked to the median shade; fringe basally checkered by a line of whitish blotches.

Secondaries fuscous, somewhat paler basally; fringe white, with a fuscous interline.

Beneath: primaries suffused with fuscous, with t. a. line marked on costa, a black discal spot, and t. p. line reproduced as a black shade, terminal line and fringes as on upper side. Secondaries: suffused with fuscous, paler basally, with black discal spot and median shade line, fringes as on upper side. Some of the maculation on the under side may be lost by suffusion. *Expanse*: 25-28 mm.

According to specimens compared with the type of *H. fasciata* Smith, the present species is closely allied, by the black dash connecting the reniform with the t. p. line, but presents a considerably different habitus due to the primaries being more heavily powdered with black, while the dash in the submedian fold, and the dark basal-t. a. area plus the dark area distad of the median shade causes the mesal half of the median area to present a strong contrast, appearing as a pale oblique band.

True *H. fasciata* is in the Barnes Collection only from "New Mexico (F. H. Snow)," and High Rolls, New Mexico, Bonniwell.

Type localities and number and sexes of types: Holotype ♂, Ft. Wingate, 8-15 July; Allotype ♀, id., 1-7 July; 2 ♂ Paratypes, id., 24-31 July, 1-7 Aug.; 2 ♂ Paratypes, Jemez Springs, 28 July 1921, (6400 ft.), 24-31 Aug.; 1 ♀ Paratype, id., 16-23 Aug.

Types in: Barnes Collection, except 1 ♂ Paratype, 28 July 1921, received from Mr. Fred Marloff for identification, and returned to him.

***Syneda athabasca* Neum.**

1883, Neum., Papilio, III, 143, *Syneda*.

Mr. Neumoegen states in the original description, "secondaries yellowish white." The types in the Neumoegen Collection appear to have yellowish-white secondaries. A series of specimens from Calgary and Nordegg, Alberta, in the Barnes Collection, vary greatly in the color of the secondaries, but always showing at least a considerable yellowish tinge. The authors are unable to state whether the pale condition of the secondaries of some specimens is the result of fading while the insect is still alive, or while in collections, or due to chemical action of ammonia in poor killing bottles; or if there actually are individual differences.

***Syneda athabasca* race *crokeri* nov.**

A series of eight specimens from Saskatchewan, and three specimens without locality, in the Barnes Collection, do not show the faintest trace of yellow on the secondaries. There are additional specimens in the Brooklyn Museum. It seems impossible that these specimens could have completely lost all trace of yellow, as such a condition is not present in hundreds of specimens of the various species of *Syneda* in the Barnes Collection.

The authors are inclined to consider the white hind-winged form a geographical race, although it appears to be more worthy of specific rank than many of the so-called "species" of *Syneda*. Most, and probably all, of the specimens were collected by A. J. Croker.

Type localities and number and sexes of types: Holotype ♂, Allotype ♀, 3 ♂, 1 ♀, Paratypes, "Sask. Canada, 27-6-07 A. J. Croker"; 1 ♀ Paratype, "Redvers, Sask. 27-6-07"; 1 ♀ Paratype, "Redvers, Sask. 4-6-06 A. J. C."; 1 ♀ Paratype "9-6-06"; and 2 ♀ Paratypes, no data, in Barnes Collection; also a series of specimens from A. J. Croker in the Brooklyn Museum Collection.

***Anticarsia schausi* sp. nov.**

Head, thorax, abdomen and wings concolorous, brownish-rufous, more or less tinged with violaceous.

Primaries: t. a. line waved from costa to inner margin; orbicular a small yellowish dot; median shade line more or less obsolescent in some specimens, in others clearly defined, outwardly oblique from costa to reniform, thence inwardly oblique to inner margin, produced to points on veins 2 and 1; reniform yellowish, erect, narrow, with a black central line; t. p. line erect between costa and radius, excurved to vein 3, thence incurved, produced to a point on vein 1, s. t. line composed of black dots between the veins; terminal series of black dots between the veins connected by a few fuscous scales and a bright rufous line; fringes bright rufous, interlined by violaceous.

Secondaries: with black discal mark and median shade line; a sub-terminal series of dots corresponding to the s. t. line of the primaries present or absent; terminal line and fringes as on primaries.

Beneath: bright brownish-rufous, maculation similar to the upper side except that the t. a. line is absent and that the other lines and spots are more contrastingly black, more or less outlined by luteous-white; the veins bright red. *Expanse*: 37-40 mm.

The authors are enabled to describe the present species thru the kindness of Mr. Schaus, who supplied a specimen of *A. mixtura* Wlk. = *leucoma* F. F. & R. for comparison. *A. schausi* appears genitally distinct, its closest ally being *feruginca* Sm., from which it may be easily recognized, by the reniform being yellowish and not strongly broken by intersecting veins, and by its more even and less patchy appearance.

Type localities and number and sexes of types: Holotype ♂, Palmerlee, Cochise County, Arizona; 3 ♂ Paratypes, id.; 2 ♂ Paratypes, Southern Arizona (Poling); 6 ♂ Paratypes, Huachuca Mts., Arizona, the only dated specimen being from the Huachuca Mts., 8-15 October.

***Hemeroplanis finitima* race *concoloralis* nov.**

Tibiae and underside of the primaries without secondary sexual characters. Head, collar, thorax, abdomen, and ground color of wings, concolorously dull brown.

Primaries: t. a. line blackish, punctiform, almost erect, only slightly incurved in submedian fold; orbicular not present; reniform poorly marked by a few blackish scales; t. p. line yellowish, almost erect from costa to vein 4, incurved in submedian fold, preceded by a punctiform black line; s. t. line punctiform, parallel to the outer margin, marked by black sagittate dashes and small violaceous spots between the veins; a terminal series of faint black dots between the veins; fringe concolorous with the primaries.

Secondaries: similar in color to the primaries, only very slightly paler basally, with an obsolescent discal spot and s. t. shade.

Beneath: primaries: dull brownish with a slight rufous cast; a faint blackish discal spot; median and s. t. shades blackish, parallel to the outer margin. Secondaries: pale, sprinkled with black atoms and strongly tinged with rufous; with blackish discal spot; blackish median and s. t. shades parallel to the outer margin. *Expanse*: 27 mm.

This form has been standing as possibly *H. reversalis* Sm., in the Barnes Collection. Examination of the type of *reversalis* in the Smith Collection proved that *reversalis* was more closely allied to *secundalis*.

Concoloralis is possibly a distinct species with a more northern habitat than *finitima*. The type is the only specimen the authors have seen from so far north in California, and it is not closely approached by over one hundred and thirty specimens representing *finitima* and its various forms. The t. p. line, especially on the underside where it shows as a "median shade," appears a little straighter than in typical *finitima*, and is not excurved below the costa.

As the name is based upon a single specimen, and mainly upon characters which are variable in the group, it appears best to describe it as a northern race of *finitima*. There are probably more names than species in the genus *Hemeroplanis* (= *Pleonectyptera*), but most of the names will eventually have at least "form" status.

Type locality: Shasta Retreat, Siskiyou County, California.

Number and sexes of types: Holotype ♂, 8-15 August, unique.

Metalestra diabolica sp. nov.

Ground color brownish rufous, but so covered with indistinct markings as to appear blackish.

Primaries: basal line rufous, obsolescent except on costa; t. a. line rufous, poorly defined, waved from costa to inner margin; orbicular a small round black dot, often obsolescent; median shade double, more or less diffused in a generally fuscous basal-median system of shades; the area between the median shades and the t. p. line rufous, more or less obscured by fuscous; reniform black, distinct; t. p. line black, produced to blunt points on the veins, rounded from costa, drawn in to a point opposite the cell, this point being marked by a black dot, again excurved to about vein 3, thence incurved to inner margin but interrupted by being produced to a point on vein 1; the t. p. line followed by a rufous shade line in contact with it for its entire length; s. t. line faint, yellowish-rufous, strongly bent inward below costa, opposite the cell, and in the submedian fold; terminal line composed of narrow, black

crescents, the hollows between the veins being filled by yellowish dots; fringe black, more or less checkered by yellowish.

Secondaries: basal area heavily obscured by black shades; discal spot large and black but often difficult to see because of being fused with, and obscured by, the black basal shadings; medial line narrow, black, more or less irregular, outwardly produced opposite the cell; followed by an obsolescent pale shade line; an s. t. intermediate pale shade line; terminal line, yellow dots, and fringes as on the primaries.

Beneath: ground color dirty-yellowish, heavily powdered with fuscous; terminal lines and fringes as on the upper side; primaries with a black discal dot and median shade line; secondaries with blackish discal dot bounded mesially and distally by blackish shade lines which make contact with it, ordinary median shade line black and distinct. *Expanse* 18-23 mm.

This is the *tantillus* of various authors. Specimens were sent to Sir George Hampson, who failed to match it in the British Museum, returning a specimen marked "not *tantillus*." A specimen of *monodia* agreed with the type of *tantillus*.

It is possible that Grote had a mixed type series as he records *tantillus* from Texas, but his description agrees identically with his type in the British Museum and not with *diabolica*, so the name is restricted to the British Museum type.

Both authors have personally compared specimens, of the two species involved, with the types of *monodia*, and the series of other *Metalestra* in the National Museum, where *diabolica* is placed as *tantillus*. Mr. Schaus kindly informed the junior author that no tropical species entered into the synonymy.

M. diabolica belongs to that group of *Metalestra* which lacks the yellowish dashes on the veins in the s. t. space at the ends of the points of the t. p. line. From *edilis* and *cincta* it may be told by its darker appearance and totally different habitus; from *miserulata* (= *irentis*) by the possession of either a large black discal spot on the secondaries or heavy banding which obscures the spot; while from *tantillus*, its closest ally, by not possessing a nearly unicolorous black appearance only interrupted by narrow broken, but strongly contrasting, whitish-yellow lines.

Type localities and number and sexes of types: Holotype ♂, San Benito, 16-23 June; Allotype ♀, id., 8-15 July; 8 ♂ Paratypes, id., 16-23 June (1); id., Aug. (1); Kerrville, April (2); id., no date (1); Black Jack Springs (1); Brownsville (1); Harris County, 16-23 Sept. (1); 2 ♀ Paratypes, San Benito (1); Brownsville, "5-11," Geo. Dörner (1), all Texas.

Types of all the forms here described as new are in the Barnes collection, unless otherwise stated.